



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/087,116	03/01/2002	Troy Michael Herndon	8033102	4202

7590

03/25/2004

James A. Sheridan
Moser, Patterson, & Sheridan L.L.P.
595 Shrewsbury Avenue, Suite 100
Shrewsbury, NJ 07702

EXAMINER

SNIEZEK, ANDREW L

ART UNIT

PAPER NUMBER

2651

DATE MAILED: 03/25/2004

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/087,116

Applicant(s)

HERNDON ET AL.

Examiner

Andrew L. Sniezek

Art Unit

2651

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-3, 6, 7 and 18 is/are allowed.
- 6) ☒ Claim(s) 4, 5, 8-10, 13, 14, 19 and 20 is/are rejected.
- 7) ☒ Claim(s) 11, 12 and 15-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 March 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

1. It is noted that applicant is claiming benefit under 35 U.S.C. §119(e) of provisional application 60/342,681. As stated by applicant in the specification and in the declaration for patent application this provisional application was indicated as filed 12/5/01.

According to PTO records it appears that the above-mentioned application was filed on 12/20/01. Examiner has ordered the provisional application in an effort to confirm this discrepancy. Applicant is requested to check their records to verify the information provided is correct.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: element (52) discussed in the specification (page 6) does not have a corresponding number in figure 2. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to because figure 1 does not have labels for the axis of the graph. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the structure used for the reduction of temperature change of the motor and for increasing the rotational

Art Unit: 2651

velocity must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 4, 5 and 13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claims 4 sets forth increasing the velocity of the motor and claims 5 and 13 set forth reducing the temperature of the motor. The specific arrangements that are used to obtain these results are not provided by the written disclosure.

Specification

7. The abstract of the disclosure is objected to because the meaning of the acronym was not provided. Examiner suggests to insert (fluid dynamic bearing) after the noted acronym. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 103

Art Unit: 2651

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 8-10 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fleury et al.

Fleury et al. teaches an apparatus that increases the stiffness of a FDB motor (column 2, line 52 – column 3, line 10 along with column 9, line 51- column 10, line 5). Fleury et al. does not specifically teach to increase the stiffness during servo writing as set forth in claim 8. It is well known in the art to write servo information on disks and that during a servo write operation the disks are rotating relative to the transducer, therefore the bearings are in operation. Official notice is hereby given. Fleury et al. makes it clear in column 10 that the designer has control over the amount of desired stiffness during bearing operation. It would have been obvious to one of ordinary skill in

Art Unit: 2651

the art at the time of the invention given the teaching of Fleury et al. to control the stiffness of the bearing at various bearing operations including a well known servo write operation since this would achieve a more accurate recording of servo information. The compressive load as set forth in claim 9 is satisfied by the operation of the piezoelectric member (804), which is used to provide a greater stiffness to the bearing. As shown in figure 10 there can be provided on each end of the shaft a piezoelectric arrangement that is used to provide a clamping force between surfaces 1006 and 1008 therefor providing a clamping action. Claim 14 sets forth similar limitations as discussed with respect to claim 10.

11. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fleury et al., in view of Liu et al.

The teaching of Fleury et al. is discussed above and incorporated herein. Claim 19 additionally sets forth that the bearing used is a conical bearing. Although not taught in Fleury et al., such bearings are well known in the spindle drive art as taught by Liu et al. (column 4, lines 59-63) for the same purpose of holding spindle arrangements in a disk environment. It would have been obvious to one of ordinary skill in the art at the time of the invention to replace the bearing as taught by Fleury et al. with a conical bearing as taught by Liu et al. since each are used in similar arrangements for similar purposes. Claim 20/14 set forth limitations similar to those discussed above and rejected for similar reasons.

Allowable Subject Matter

12. Claims 1-3, 6-7 and 18 are allowed.

Art Unit: 2651

13. Claims 11-12, 15-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. The following is a statement of reasons for the indication of allowable subject matter: The claimed method of reducing run out during a servo write as set forth in claim 1 that includes the combination of increasing the stiffness of the bearing during the servo write and then decreasing the stiffness of the bearing after the servo write is neither taught by nor an obvious variation of the art of record. Claims 2-3, 6-7 and 18 depend directly or indirectly on claim 1. The claimed arrangement as set forth in claim 11/8 and 12/8 that uses an electromagnetic means as disclosed with respect to figure 4 to selectively increase the stiffness of the bearing during a servo write is neither taught by nor an obvious variation of the art of record. Claims 16-17 depend on claim 12. The claimed arrangement as set forth in claim 15/14 that includes a clamp that abuts the two ends of the shaft and also abuts the casing to provide the part of the apparatus that increases the bearing stiffness of a FDB during a servo write as set forth is neither taught by nor an obvious variation of the art of record.

Conclusion

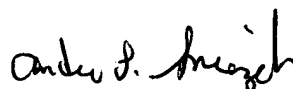
15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Misso et al. And Milligan having the same assignee as the present invention teaches various aspects of the invention but the combination of claimed features. Szerenmeta teaches a self aligning bearing for a servo writer but does not selectively increase the stiffness.

Art Unit: 2651

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew L. Sniezek whose telephone number is 703-308-1602. The examiner can normally be reached on Mon.-Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on 703-305-4700. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Andrew L. Sniezek
Primary Examiner
Art Unit 2651

A.L.S.
3/22/04